December 17, 2007
For Immediate Release

Contacts: Jim Nickles, USGS, 916/278-3016, cell-916/715-2253
Heather Engel, CVWD, 760/398-2651

Study finds subsidence continuing in the Coachella Valley

Water management and conservation critical to reducing groundwater demands, CVWD says

A new study by the U.S. Geological Survey confirms Coachella Valley Water District (CVWD) concerns that land subsidence – or dropping land elevations – is occurring in areas of substantial groundwater use throughout the Coachella Valley.

"This study tells us our assumptions were correct and underscores the importance of eliminating overdraft of the aquifer," said Steve Robbins, CVWD general manager-chief engineer. "With the support of the community and the other water agencies in the valley, I'm confident we can take the steps necessary to stabilize the groundwater levels for the future of the entire Coachella Valley."

The two agencies initiated the study in 1996 when it was first believed subsidence was occurring in the Coachella Valley. Scientists with the USGS California Water Science Center used Global Positioning System (GPS) surveying and a satellite mapping process known as interferometric synthetic aperture radar (InSAR) to document the drops in elevation between 1996 and 2005. GPS measurements are taken on the ground at specific locations, or benchmarks, while InSAR provides an areawide elevation-change map or snapshot.

At all of the GPS benchmarks, some subsidence occurred between 1996 and 2005. At three benchmarks, the drop was less than an inch, while at three others the subsidence was about a foot. At one benchmark, near the intersection of 54th Avenue and Jackson Street near Coachella, the one-foot drop in land-surface elevation happened from 2000 to 2005.

"The subsidence rates in many areas have more than doubled since 2000," said Michelle Sneed, USGS scientist and lead author of the study. "All the subsiding areas are near sites where ground-water levels declined between 1996 and 2005, and some water levels in 2005 were at the lowest levels in their recorded histories."

The research, which has cost about $790,000 since 1995, has been funded primarily by the USGS and the Coachella Valley Water District, with the city of Palm Desert contributing $17,000.

Since the 1920s, groundwater has been a major source of agricultural, municipal, and domestic supply in the Coachella Valley, resulting in significant groundwater pumping that has contributed to water-level declines of as much as 100 feet. The heavy groundwater use, in turn, has led to subsidence, which can disrupt surface drainage; reduce aquifer storage; cause earth fissures; and damage wells, buildings, roads and utility infrastructure.

In 2001, CVWD addressed groundwater overdraft by adopting a comprehensive Water Management Plan (WMP) to act as a blueprint for water reliability. The WMP takes a three-tiered approach to

groundwater management: an increased imported water supply; promotion and assistance with conservation, and providing existing groundwater users an alternative source of water.

CVWD planned and prioritized nearly 50 programs and projects for the WMP. Current WMP efforts aimed at keeping groundwater levels stable include construction of the $70 million Mid-Valley Pipeline, which will enable up to 50 golf courses to utilize a blend of recycled water and Colorado River water in lieu of groundwater, and the $40 million groundwater recharge facility south of Lake Cahuilla.

“Addressing declining water levels has always been a priority for the water district, which is why the Coachella Canal was built in the 1940s and the Whitewater recharge ponds constructed in the 1970s,” Robbins said. “As the Coachella Valley’s popularity and prosperity continue, it’s crucial that CVWD and other local water agencies continue making significant strides to ensure a reliable water supply.”

The U.S. Geological Survey report, “Detection and Measurement of Land Subsidence Using Global Positioning System Surveying and Interferometric Synthetic Aperture Radar, Coachella Valley, California, 1996-2005,” by Michelle Sneed, et al., can be found on the Internet at the USGS California Water Science Center’s Web site at http://ca.water.usgs.gov/.

###

USGS provides science for a changing world. For more information, visit http://www.usgs.gov/. The California Water Science Center (http://ca.water.usgs.gov/) has more than 130 scientists who bring a broad range of scientific disciplines to the study of modern water management issues.

CVWD is a public agency, governed by a five-member board of directors, that provides domestic and irrigation water, agricultural drainage, wastewater treatment and reclamation services, regional stormwater protection, groundwater management and water conservation across 1,000 square miles, primarily in Riverside County but also in portions of Imperial and San Diego counties.